Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Evonik Degussa Corp
Evonik Degussa Corp - Ivanhoe Carbon Black Plant
Ivanhoe, St. Mary Parish, Louisiana
Agency Interest Number: 2518
Activity Number: PER20090001
Proposed Permit Number: 2660-00013-V2

I. APPLICANT

Company:
Evonik Degussa Corp
PO Box 9320
New Iberia, Louisiana 70562-9320

Facility:
Evonik Degussa Corp - Ivanhoe Carbon Black Plant
7095 Hwy 83 South
Ivanhoe, St. Mary Parish, Louisiana
N 29° 46' 41" W 91° 44' 16"

II. FACILITY AND CURRENT PERMIT STATUS

The Ivanhoe Carbon Black Plant, located in St. Mary Parish, produces carbon black using the furnace process. The facility consists of seven reactors, eight bag filter units, eight cyclones, four dryers, four flares, and five storage tanks.

Carbon black, a colloid composed essentially of carbon, is manufactured by the thermal decomposition (cracking) of hydrocarbons. Air for combustion is supplied by a blower, which moves the air through an inline air preheater prior to entering the combustion chamber of the reactor. The feedstock is pumped from the feedstock storage tanks through an oil preheater and into the reactor.

Small amounts of feedstock additive (potassium ion solution) may be injected for process control. Upon completion of the cracking reaction, the carbon black laden process gas stream is quenched and cooled by direct injection of water.

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Once the carbon black laden gas (smoke stream) is reduced to a temperature of not more than 500 °F, the smoke stream is passed directly into a multi-compartment, multi-bag filter system (primary bag filter). After depositing 99.7% to 99.9% of the solids in the filter, the effluent gas (tail-gas) is transferred in varying amounts to the dryers, for use as fuel, and/or the flares. Both the dryers and the flares destroy incompletely oxidized compounds with at least 98% efficiency and combust carbon black particulate matter with 95% efficiency. The primary bag filters and the flares are currently considered control technology for the carbon black units.

The solids collected by the primary bag filter are pneumatically conveyed to a cyclone where partial separation of the carbon black and carrier gas takes place. The separated carbon black is re-suspended in the pneumatic conveyor stream and conveyed to a second cyclone where the separated carbon black falls into a surge bin. The carrier gas is then recycled to the primary bag filter.

The carbon black in the surge bin passes to a pelletizer where water is added to promote the formation of pellets. The pellets then pass to a rotary drum dryer, which removes the water added in the pelletizer. Air is drawn into the rotary drum by the dryer exhaust blower to remove any carbon black particulate. To prevent particulate pollution, the air-carbon black dust stream is passed through the dryer exhaust bag filter where greater than 99% of the particulates are removed. The product is then conveyed to product storage tanks for bulk loading or packaging at a bagging station. A utility vacuum system controls the particulate emissions associated with product storage and handling.

Upon review, the facility has determined that the previously calculated concentration of hydrogen sulfide in the tailgas from its furnaces was too high, and has proposed a lower hydrogen sulfide concentration, resulting in facility-wide permitted total emissions of only 30.12 tons per year. Also, the facility-wide permitted total emissions of sulfur dioxide have been revised to 11,436.68 tons per year due to a typographical error in the previous permit.

The Ivanhoe Carbon Black Plant was first permitted in April of 1975 under State Permit 458. A modification was issued July 27, 1991, under Permit No. 2660-00013-01. On November 1, 1995, Permit No. 2660-00013-02 and PSD-LA-578 were granted. Currently, the plant is operating under Permit No. 2660-00013-V1, issued June 8, 2006, and PSD permit PSD-LA-585(M-1) issued December 9, 2004.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Evonik Degussa Corp on June 1, 2009, requesting a Part 70 operating permit renewal/modification for the Ivanhoe Carbon Black Plant.

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Proposed Permit

Permit 2660-00013-V2 will be the renewal of Part 70 operating permit 2660-00013-V1 for the Ivanhoe Carbon Black Plant.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	52.22	52.22	-
SO_2	11,439.07	11,436.68	- 2.39
NO_x	1,360.47	1,360.47	-
CO	1,157.59	1,157.59	-
VOC	126.78	126.78	-

VOC LAC 33:III Chapter 51 Toxic Air Pollutants (Tons/yr):

Pollutant	Before	After	Change
Benzene	0.31	0.31	-
Carbonyl sulfide	4.66	4.66	-
Carbon disulfide	29.52	29.52	-
Hydrogen sulfide	31.70	30.12	- 1.58
Hydrogen cyanide	7.88	7.88	-

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.